



## Second Five-Year Review Report

for

Boise/Onan/Medtronic

City of Fridley

Anoka County, Minnesota

September 2004

PREPARED BY:

Minnesota Pollution Control Agency  
St. Paul, Minnesota

Approved by:

Michael Kanner  
Manager, Superfund Section  
Minnesota Pollution Control Agency

Date:

Sept. 13, 2004

Approved by:

Richard C. Karl  
Acting Director, Region 5 Superfund Division  
United States Environmental Protection Agency

Date:

9-17-04

## Second Five-Year Review Report

for

Boise/Onan/Medtronic

City of Fridley

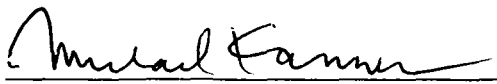
Anoka County, Minnesota

September 2004

PREPARED BY:

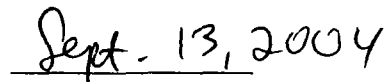
Minnesota Pollution Control Agency  
St. Paul, Minnesota

Approved by:



Michael Kanner  
Manager, Superfund Section  
Minnesota Pollution Control Agency

Date:



Approved by:

Date:

\_\_\_\_\_  
Richard C. Karl  
Acting Director, Region 5 Superfund Division  
United States Environmental Protection Agency

[This page intentionally left blank.]

## TABLE OF CONTENTS

List of Acronyms  
Executive Summary  
Five-year Review Summary Form

I. INTRODUCTION.....	1
II. SITE CHRONOLOGY .....	2
III. BACKGROUND .....	2
Physical Characteristics .....	2
Adjacent Land and Resource Use .....	2
History of Contamination.....	2
Initial Response.....	3
Site Investigation .....	3
Basis For Taking Action .....	3
IV. REMEDIAL ACTIONS .....	3
Remedy Selection .....	3
Remedy Implementation .....	4
System Operations and Maintenance .....	5
V. PROGRESS SINCE THE LAST REVIEW .....	5
VI. FIVE-YEAR REVIEW PROCESS.....	5
Administrative Components.....	5
Community Involvement.....	6
Document Review .....	6
ARAR Review .....	6
Data Review.....	7
Site Visit .....	8
Interviews.....	8
VII. TECHNICAL ASSESSMENT .....	9
VIII. ISSUES .....	9
IX. RECOMMENDATIONS.....	9
X. PROTECTIVENESS STATEMENT.....	10
XI. NEXT REVIEW .....	10

### APPENDIX A - FIGURES

Figure 1 - Site Location  
Figure 2 - Monitoring Well and Soil Boring Locations  
Figure 3 - Fridley Formation Aquifer and Upper Hillside Sand Groundwater Elevations  
Figure 4 - Geographic Distribution of Organic Compounds – Fridley Formation and Upper Hillside Sand  
Figure 5 - Geographic Distribution of Organic Compounds – Lower Hillside Sand and Prairie du Chien  
Figure 6 - Geographic Distribution of Organic Compounds – Vault Monitoring Wells

### APPENDIX B - TABLES

Table 1 - Analytical Parameters  
Table 2 - Groundwater Quality Data – Fridley Formation Monitoring Wells  
Table 3 - Groundwater Quality Data – Lower and Upper Hillside Aquifer Wells  
Table 4 - Groundwater Quality Data – Prairie du Chien Aquifer Wells  
Table 5 - Water Level Data – Containment Area  
Table 6 - Groundwater Quality Data – Containment Area  
Table 7 - Groundwater Quality Data – Compared to Class 2Bd Surface Water Standards

### APPENDIX C - BIBLIOGRAPHY

## List of Acronyms

ACLs	Alternate Concentration Levels
AMR	Annual Monitoring Report
AOC	Administrative Order of Consent
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
COC	Chemical of Concern
EPA	United States Environmental Protection Agency
HBV	Health Based Value
HRL	Health Risk Level
IC	Institutional Control
IPE	Isopropyl Ether
MCES	Metropolitan Council Environmental Services
MCLs	Maximum Contaminant Levels
MDH	Minnesota Department of Health
MERLA	Minnesota Environmental Liability and Response Act
MPCA	Minnesota Pollution Control Agency
NCP	Nation Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PLP	Permanent List of Priorities
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
RA	Remedial Action
RAGS	Risk Assessment Guidance for Superfund
RAL	Recommended Allowable Limit
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SDWA	Safe Drinking Water Act
TBCs	To Be Considereds
SVOCs	Semi-Volatile Organic Compounds
WasteLan	The Regional database related to CERCLIS

## **Executive Summary**

The remedy for the Boise/Onan/Medtronic Site located in Fridley, Minnesota included the excavation and disposal of contaminated soil, the removal and disposal of free oil, the containment of contaminated soil in a slurry wall containment area on the Onan property, and long-term groundwater monitoring. The trigger for this five-year review was the EPA approval date for the previous five-year review.

Removal and disposal of contaminated soil, removal and disposal of the free oil, and construction of the slurry wall containment area occurred in 1984 and 1985. Long-term groundwater monitoring began in the mid-1980's and continues through the present. The monitoring indicates the contaminant plume is decreasing in lateral and vertical extent. There are no known drinking water wells that are impacted by the contaminant plume.

The remedy is functioning as intended and is protective of human health and the environment in the short- and long-term.

## Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): <b>Boise/Onan/Medtronic</b>		
EPA ID (from WasteLAN): <b>MND053417515</b>		
Region: <b>5</b>	State: <b>MN</b>	City/County: <b>City of Fridley/Anoka County</b>
SITE STATUS		
NPL status: <b>Deleted</b>		
Remediation status (choose all that apply): <b>Monitoring</b>		
Multiple OUs?: <b>No</b>	Construction completion date: <b>September 28, 1992</b>	
Has site been put into reuse? <b>Yes</b>		
REVIEW STATUS		
Lead agency: <b>State - MPCA</b>		
Author name: <b>Steve Schoff</b>		
Author title: <b>Project Manager</b>	Author affiliation: <b>MN Pollution Control Agency</b>	
Review period:** <b>4 / 2 / 2004 to 9 / 23 / 2004</b>		
Date(s) of site inspection: <b>5 / 12 / 2004</b>		
Type of review: <b>Policy</b>		
Review number: <b>Second (2)</b>		
Triggering action: <b>Previous Five-Year Review Report</b>		
Triggering action date (from WasteLAN): <b>September 15, 1999</b>		
Due date (five years after triggering action date): <b>September 15, 2004</b>		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

## **Five-Year Review Summary Form, cont'd.**

**Issues:**

None.

**Recommendations and Follow-up Actions:**

Continue to perform groundwater monitoring to evaluate the effectiveness of the remedy. The monitoring should be evaluated on an ongoing basis as part of the annual review.

**Protectiveness Statement(s):**

The remedy is functioning as intended and is protective of human health and the environment in the short- and long-term.

**Other Comments:**

None



## **FIVE-YEAR REVIEW REPORT**

**Boise/Onan/Medtronic  
Fridley, Minnesota**

### **I. INTRODUCTION**

The purpose of the five-year review is to determine whether the remedy at the Boise/Onan/Medtronic Site is protective of human health and the environment. The methods, findings and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues during the review, if any, and identify recommendations to address them.

The Agency is preparing this Five-Year Review report pursuant to CERLA Section 121 and the National Contingency Plan (NCP). CERLA Section 121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to ensure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such actions.*

The Agency interpreted this requirement further in the NCP; 40 CFR Section 300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action.*

The Minnesota Pollution Control Agency (MPCA) staff has completed a Five-Year Review of the Remedial Actions (RAs) conducted at the Boise/Onan/Medtronic Site in Fridley, Minnesota. This Five-Year Review evaluates whether the RA remains protective of public health, welfare, and the environment and was conducted from April 2004 through September 2004.

This review focuses on the protectiveness of the Boise/Onan/Medtronic Site RA twenty years from the time the RA commenced. This is the second Five-Year Review completed by the MPCA. On September 15, 1999 EPA concurred on the first Five-Year Review in a letter received by MPCA on September 23, 1999.

## II. SITE CHRONOLOGY

### Chronology of Site Events

Date	Event
1979	Contaminated soil was encountered during Site development.
January 1984	Boise Cascade (Boise), Medtronic, Inc. (Medtronic) and MPCA entered into a Consent Decree for the Medtronic portion of the Site.
Summer 1984	Sludge and contaminated soil from wastewater lagoons and conveyance trenches was excavated from the Medtronic portion of the Site and sent to a permitted disposal facility.
9/21/1984	Site was placed on the National Priorities List (NPL).
10/19/1984	Site was placed on the Permanent List of Priorities (PLP).
December 1984	Injunctive Order between Onan Corporation (Onan), Boise, Soo Line Railroad and MPCA regarding the Remedial Action Plan (RAP) for the Onan portion of the Site.
1985	Containment of contaminated soil within a slurry wall containment area on the Onan property.
2/15/1995	Site was deleted from the NPL.
7 & 8/ 1999	Portions of the Site were deleted from the PLP.
9/23/1999	Completion of the first Five-Year Review by MPCA.
1985 - Present	Ongoing monitoring of the groundwater remedy.

## III. BACKGROUND

### Physical Characteristics

The Boise/Onan/Medtronic Site (Site) covers 183 acres and is located in Fridley, Anoka County, Minnesota (Figure 1). The Site encompasses property owned by several private companies. There are office and/or light industrial buildings on the Site.

### Adjacent Land and Resource Use

Adjacent land use consists of commercial development to the west and residential properties to the north, east and south of the Site.

### History of Contamination

The Site was owned and operated from approximately 1921 through 1961 by the National Pole and Treating Company and its affiliate, Minnesota and Ontario Paper Company (M&O) as a wood treating facility. Initial operation included the use of creosote treatment of wood for the manufacture of railroad ties and utility poles. In 1958, pentachlorophenol (PCP), another wood preservative, was used to treat lumber. Wood treating operations

ceased in 1961. In 1964, M&O merged with Boise Cascade Corporation (Boise). Medtronic, Inc. acquired 50 acres and Onan, Inc. acquired 133 acres of the Site.

## **Initial Response**

### **Site Investigation**

In 1979, Onan began excavation for construction purposes and encountered large quantities of creosote and PCP saturated soil. Similar deposits were subsequently discovered on the Medtronic portion of the Site. Wood treating operations had contaminated the soil and groundwater with creosote and PCP by spillage, dripping and wastewater disposal.

The Site was placed on the NPL on September 21, 1984 and the PLP on October 19, 1984. Boise conducted extensive soil and groundwater investigations from 1979 through 1982. Because the Site's ownership is divided between two different companies, the investigations were conducted separately within the individual property boundaries.

The major contaminants of concern (COC) are creosote derived polynuclear aromatic hydrocarbons (PAHs) and phenolic compounds.

### **Basis For Taking Action**

Hazardous substances were detected in soil and groundwater. The hazardous substances include:

#### Soil

Polynuclear Aromatic Hydrocarbons  
Phenolic Compounds

#### Groundwater

Polynuclear Aromatic Hydrocarbons  
Phenolic Compounds

## **IV. REMEDIAL ACTIONS**

### **Remedy Selection**

The remedial actions and long-term groundwater monitoring requirements were specified in the Consent Decree between Boise, Medtronic and the MPCA, which was finalized in January 1984, and the Injunctive Order between Onan, Boise and the MPCA, which was finalized during December 1984.

The selected remedy consisted of soil excavation, removal of free oils, containment of contaminated soil within a slurry wall containment area and cap, and long-term groundwater monitoring. Long-term monitoring is being performed to verify the

effectiveness of the containment system and to monitor groundwater quality in the Fridley Formation, the Upper and Lower Hillside Formation, and the Prairie du Chien Group.

### **Remedy Implementation**

On the Onan property, a slurry wall containment system was constructed around the former retort building. Visually contaminated soil was excavated and placed in the area surrounded by the slurry wall. A cap was constructed over the area surrounded by the slurry wall. The excavated areas were backfilled with clean soil. A subdrain system was installed in the area surrounded by the slurry to remove groundwater. Dewatering was performed within the slurry wall containment area from December 1985 through August 1987.

Treatment lagoons were located on the Medtronic property. These lagoons were utilized for disposal of the wastewater generated by site operations. The wastewater contained quantities of creosote and PCP that subsequently contaminated soil and groundwater beneath the primary and secondary wastewater treatment lagoons and the trench leading to the lagoons. Both the trench and the lagoons were located on Medtronic property east of Old Central Avenue. The visually contaminated soil in the two wastewater lagoons and in the trench used to convey wastewater from the retort to the lagoons was excavated and disposed of in a hazardous waste facility that had interim status pursuant to RCRA. Excavated areas were backfilled with clean soil. Groundwater that was in contact with and directly beneath contaminated soil was collected, treated and discharged to the Fridley sanitary sewer system. About 5,000 gallons of oil discovered in the vicinity of the primary wastewater lagoon was collected and disposed offsite. Monitoring of the groundwater, surface water, sediments and air was performed. A final Close Out Report, which documents completion of Site construction was signed on September 30, 1992. On February 15, 1995 the EPA delisted the Site from the NPL.

In September 1998, Real Estate Recycling (RER) initiated a redevelopment plan for the southern half of the Onan property. The redevelopment involved the purchase of the Site by Shamrock Investments III, LLC, and construction of a 400,000 square foot industrial warehouse with associated landscaping and paved parking areas and construction of a stormwater retention pond. RER implemented a Soil Sampling and Analysis Plan and a Groundwater Sampling and Analysis Plan which were approved by the MPCA's Voluntary Investigation and Clean-up program (VIC). RER also submitted a Developer's Response Action Plan which described how soil would be screened during Site development for the presence of contamination and how contaminated soil would be managed onsite or disposed of offsite. RER also submitted a Developer's Voluntary Response Action Agreement.

On July 9, 1999, the MPCA delisted from the PLP the following portion of the Site: Lot 3, Block 1 of the Onan Addition.

## **System Operations and Maintenance**

Boise is performing ongoing groundwater monitoring at select monitoring wells installed in the Fridley Formation, the Upper and Lower Hillside Formation, the Prairie du Chien Group and in and around the slurry wall containment area.. The primary activities include the following:

- Sampling and analysis of water samples collected from select monitoring wells based on the sampling plan approved by the MPCA;
- Water level measurements at select monitoring wells; and
- Submittal of a biennial groundwater monitoring report to the MPCA.

The monitoring costs were requested from Mr. Cawrse with the Boise Cascade Corporation. Mr. Cawrse indicated they were not available.

## **V. PROGRESS SINCE THE LAST REVIEW**

The last Five-Year Review, completed in 1999, contained one recommendation which is as follows:

- The monitoring program at this site should remain unchanged, with the exception that a third Lower Hillside monitoring well should be installed and added to the monitoring program.

A third monitoring well has not been installed in the Lower Hillside Formation, because the List 1 and List 2 PAHs were not detected in the samples collected during 2002 and 2003 from Lower Hillside Formation wells LHM7 and LHM8.

## **VI. FIVE-YEAR REVIEW PROCESS**

### **Administrative Components**

The Five-Year Review was initiated during April 2004. The Boise representative was notified of the initiation of the Five-Year Review during April 2004. The review components included:

- Community Involvement;
- Document Review;
- Data Review;
- Site Inspection;
- Local Interviews; and
- Five-Year Review Report Development and Review.

## **Community Involvement**

On August 3, 2004, the MPCA issued a press release announcing that a Five-Year Review was being conducted for the Boise/Onan/Medtronic Site located in Fridley, Minnesota.

## **Document Review**

This Five-Year Review included a review of relevant documents including the biennial monitoring reports, MPCA staff response letters and the previous Five-Year Review reports. A list of the reviewed documents is presented in the Bibliography (Appendix C).

## **ARAR Review**

The Five-Year Review is being conducted to determine whether the RA for the Boise/Onan/Medtronic Site remains protective of public health and the environment. Five-Year Review guidance established policy for EPA to review and analyze the RA at a site as it is affected by newly promulgated or modified federal and state environmental laws. ARARs for the selected remedy are listed below.

### ***Safe Drinking Water Act (SDWA) (40 CFR Parts 141 - 146)***

Establishes federal maximum contaminant levels (MCLs) for contaminants in public drinking water supplies.

This ARAR applies to any aquifer that could be used for a public water supply.

### ***Minnesota Rules Chapter 4725. Water Well Code.***

Establishes standards for the construction, maintenance and sealing of wells.

This ARAR continues to apply even though the wells were previously constructed, because it governs the maintenance and sealing of wells.

### ***Clean Water Act, 40 CFR. Regulates Discharge to Surface Waters.***

### ***Minnesota Rules Chapter 7060***

Establishes uses and the nondegradation goal for groundwater and provides direction on when and how contaminated groundwater must be managed.

### ***Minnesota Rules Part 4717.7100 to 4717.7800. Establishes Health Risk Limits (HRL).***

A HRL is a concentration of groundwater contaminant or mixture of groundwater contaminants that can safely be consumed daily for a lifetime. A HRL is expressed as a

concentration in parts per billion or calculated as a “hazard index. HRLs were not in existence at the time the Consent Decree and Injunctive Order were established.

The action levels specified for the Site apply to the Lower Hillside Sand and the Prairie du Chien Group. The action levels are 28 nanograms per liter (ng/l) for the sum of the List 1 compounds and 300 ng/l for the sum of the List 2 compounds. Action levels were not established for the Upper Hillside Sand and the Fridley Formation. The List 1, List 2 and List 3 compounds are presented on Table 1.

## **Data Review**

Groundwater monitoring is performed at monitoring wells installed in the Fridley Formation, the Upper Hillside Sand, the Lower Hillside Sand and the Prairie du Chien Group (Figure 2).

The Fridley Formation is the uppermost glacial unit and is approximately 30 to 40 feet thick beneath the Site. There are a total of 12 monitoring wells completed in the Fridley Formation. The horizontal groundwater flow direction is to the southwest, towards Rice Creek (Figure 3). Monitoring wells (FM7, FM8A, FM9, FM10, FM13A, FM18, FM109, FM112, FM113, FM115A, and FM118) were sampled during the period of 2002 and 2003. List 1 PAHs were only detected in well FM113, which is located upgradient of the Site. List 2 PAHs were detected in the samples from FM7, FM8A, FM10 and FM18. The sum of the List 2 PAHs was 150 ng/l or less, with the exception of at FM10 which contained 570 ng/l (Table 2 and Figure 4).

The Twin Cities Till is widespread regionally. It is underlain by the Upper Hillside Sand which is a discontinuous layer located in the central portion of the Site. The Upper Hillside Sand is not present to a significant extent east and west of the slurry wall containment area and it thins to the north. The Lower Hillside Sand is an alluvial deposit. This deposit underlies the Twin Cities Till and overlies the Prairie du Chien Group. PAHs and phenols were not detected in the samples collected from Upper Hillside Sand monitoring wells UHP-9B and UH-301A in 2002 and 2003. List 1 and List 2 PAHs were not detected in the samples collected from Lower Hillside Sand wells LHM7 and LHM8 in 2002 and 2003. Low concentrations of phenol were detected in well LHM7 in 2002 and in LHM 8 in 2003 (Table 3 and Figure 5).

Five monitoring wells, BP9A, OPC8, OPC10, OPC512, and OPC520, in the Prairie du Chien Group were sampled for laboratory analysis in 2002 and/or 2003. The COCs were not detected in the samples, other than the sample from OPC10 collected in 2002 (Table 4 and Figure 5). The increase in the COC concentrations at OPC10 correlates with reconstructing the well with an at-grade well-head. The well-head was reconstructed because the well is located in the parking lot. The February 2004 monitoring report “suggests[ing] that the source of PAHs is from the parking lot.”

There are four pairs of monitoring wells installed in the Fridley Formation around the perimeter of the slurry wall containment area. The four pairs of monitoring wells are located at the approximate center of each wall of the containment area with one well inside the containment area and the second well outside the area. Four piezometers are also located around the slurry wall to provide additional water level data. The location of the slurry wall wells are shown on Figure 6.

Dewatering occurred from within the slurry wall containment area between December 1985 and August 1987, creating an inward gradient across the slurry wall. At the time the dewatering was stopped, the greatest water level difference across the wall was about 7.8 feet along the eastern wall (wells S3 and S4). Under the remedial action plan, dewatering from the containment area will resume if the inward gradient across the slurry wall drops to less than one foot. Water level monitoring performed in 2002 and 2003 indicates the inward gradient across the slurry wall remains (Table 5).

Groundwater samples were collected during April 2003 from the exterior monitoring wells (S1, S3, S5 and S7) at the slurry wall for laboratory analysis. The highest concentrations were detected in S7, which is located along the west side of the slurry wall (Table 6 and Figure 6). The February 2004 monitoring report states that “the concentrations are consistent with or lower than previous results.”

The sample results for the Fridley Formation wells closest to Rice Creek (wells FM7, FM8A, FM10, FM112 and FM115A) are compared to the chronic and maximum Surface Water Class 2Bd standards. The concentrations detected do not exceed the chronic or the maximum standards for Class 2Bd surface water as indicated on Table 7.

A Quality Assurance Project Plan (QAPP) was prepared during May 2000.

### **Site Visit**

Site visits have been conducted periodically throughout the review period; however, a site visit was conducted on May 12, 2004 as part of the Five-Year Review process. The monitoring wells referenced in this document are in place.

### **Interviews**

Mr. Allan Cawrse, Environmental Services Manager with Boise Cascade Corporation, was interviewed on June 16, 2004. Mr. Cawrse stated the remedy is effective and is protective of human health and the environment. He stated that delisting of the remainder of the Site from the PLP was warranted.



## **VII. TECHNICAL ASSESSMENT**

### **Question A: Is the remedy functioning as intended by the decision documents?**

Yes. The Consent Decree and the Injunctive Order documented the remedial action for the Boise/Onan/Medtronic Site. The remedial action included the excavation and disposal of contaminated soil, the removal and disposal of free oil, the containment of contaminated soil in a capped slurry wall containment area on the Onan property, and long-term groundwater monitoring.

Removal and disposal of contaminated soil, removal and disposal of the free oil, and construction of the slurry wall containment area occurred in 1984 and 1985. Long-term groundwater monitoring began in the mid-1980's and continues through the present. The monitoring indicates the contaminant plume is decreasing in lateral and vertical extent. There are no known drinking water wells that are impacted by the contaminant plume.

### **Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?**

Yes. The groundwater action levels presented in the Consent Decree and in the Injunctive Order remain in effect and continue to be used to evaluate the effectiveness of the Site remedy.

### **Question C: Has any other information come to light that could question the protectiveness of the remedy?**

No. There is no other information that calls into question the protectiveness of the remedy.

## **VIII. ISSUES**

There were no issues found as a result of this five-year review.

## **IX. RECOMMENDATIONS**

The long-term groundwater monitoring indicates the contaminant concentrations continue to decrease. It is recommended that the groundwater monitoring continue as appropriate based on the findings of the annual review. The remainder of the Site is being evaluated for delisting from the PLP based on continued success of the Site remedy. The following recommendations are:

- Continue to perform groundwater monitoring to the extent necessary to document protectiveness of human health and the environment. The effectiveness of the Site remedy should continue to be evaluated in the monitoring report with the intent of reducing the monitoring as needed.

- Pursue deletion of the remainder of the Site from the PLP.

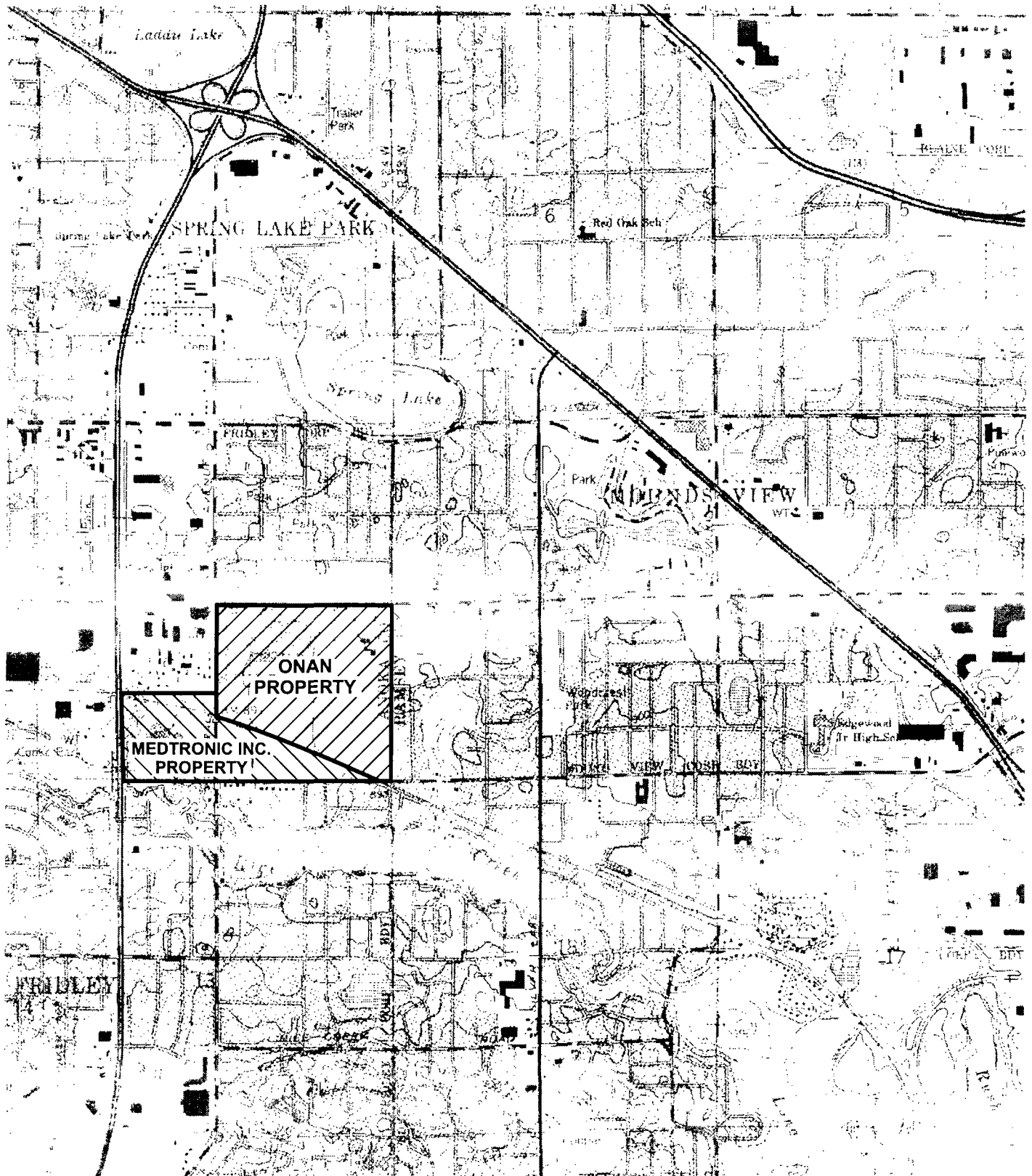
## **X. PROTECTIVENESS STATEMENT**

The remedy is functioning as intended and is protective of human health and the environment in the short- and long-term.

## **XI. NEXT REVIEW**

Hazardous substances, pollutants, or contaminants will remain at the Boise/Onan/Medtronic Site that will not allow for unlimited use or unrestricted exposure. EPA or the MPCA, if delegated to do so by EPA, will conduct another Five-Year Review five years from the date of this review.

## **APPENDIX A**



Source: USGS 7.5' Quadrangle, New Brighton, MN 1967 Revised 1993



QUADRANGLE LOCATION



0 2000 4000

Approximate Scale in Feet

Figure 1

LOCATION OF NATIONAL POLE  
AND TREATING COMPANY SITE  
Fridley, Minnesota

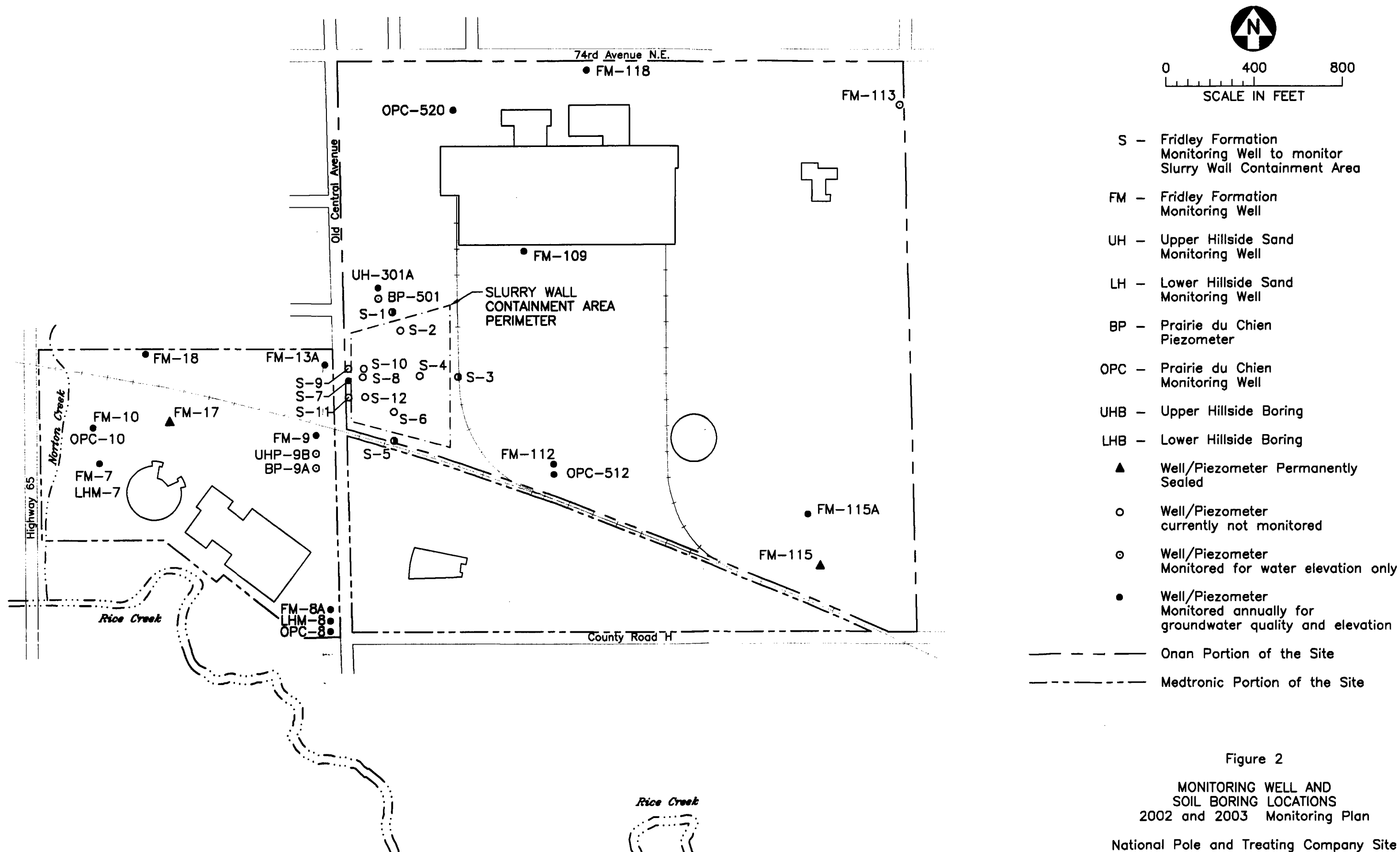
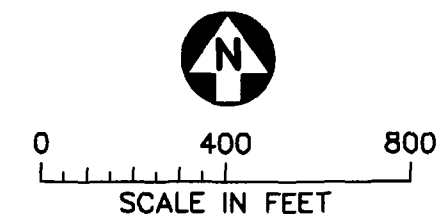
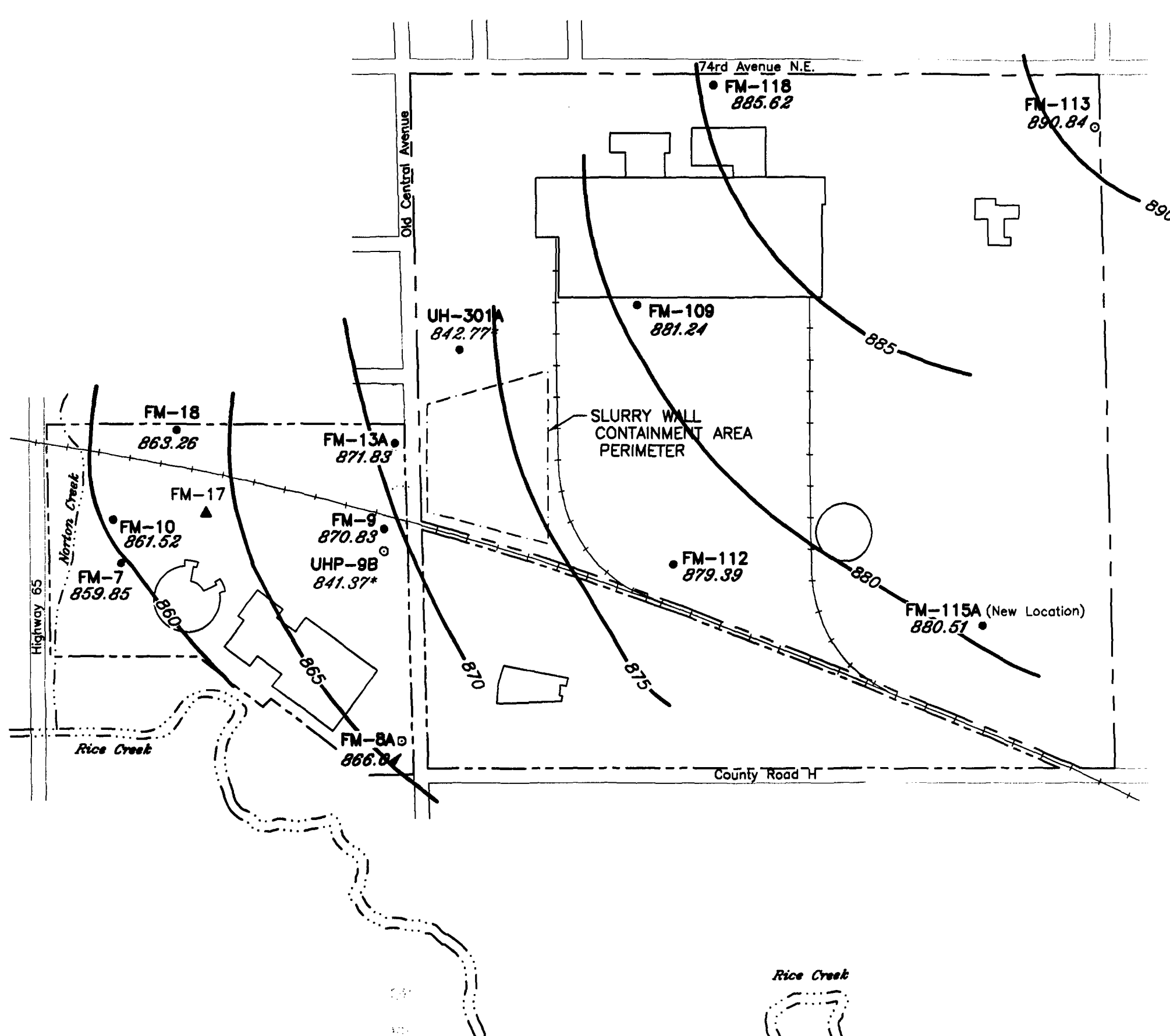


Figure 2

MONITORING WELL AND  
SOIL BORING LOCATIONS  
2002 and 2003 Monitoring Plan

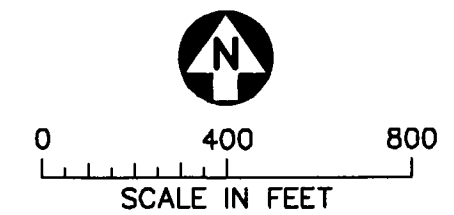
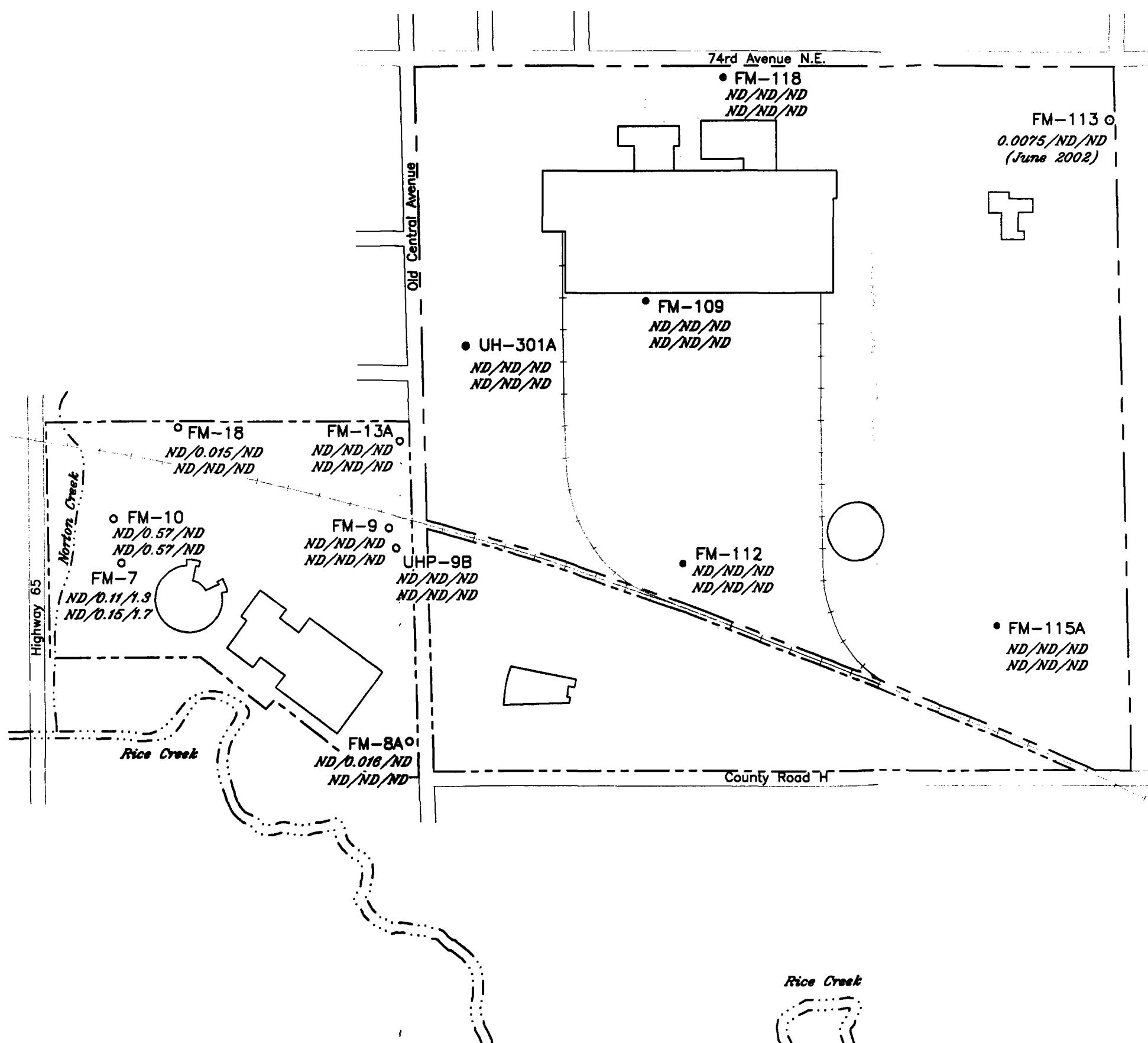
National Pole and Treating Company Site  
Fridley, Minnesota



- FM - Fridley Formation Monitoring Well
- UH - Upper Hillside Sand Monitoring Well
- ▲ Well/Piezometer Permanently Sealed
- Onan Portion of the Site
- - - - Medtronic Portion of the Site
- 869.14 Groundwater Elevation (feet, MSL)
- 838.32\* Groundwater Elevation not used for Contours
- 885 ——— Groundwater Contour (feet, MSL)  
Dashed where Approximate

Figure 3

FRIDLEY FORMATION AQUIFER  
AND UPPER HILLSIDE SAND  
GROUNDWATER ELEVATIONS (feet, MSL)  
April 2003  
National Pole and Treating Company Site  
Fridley, Minnesota

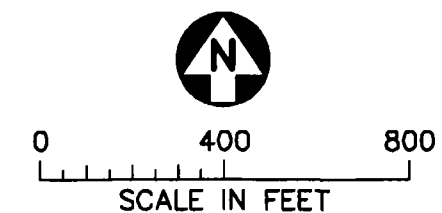
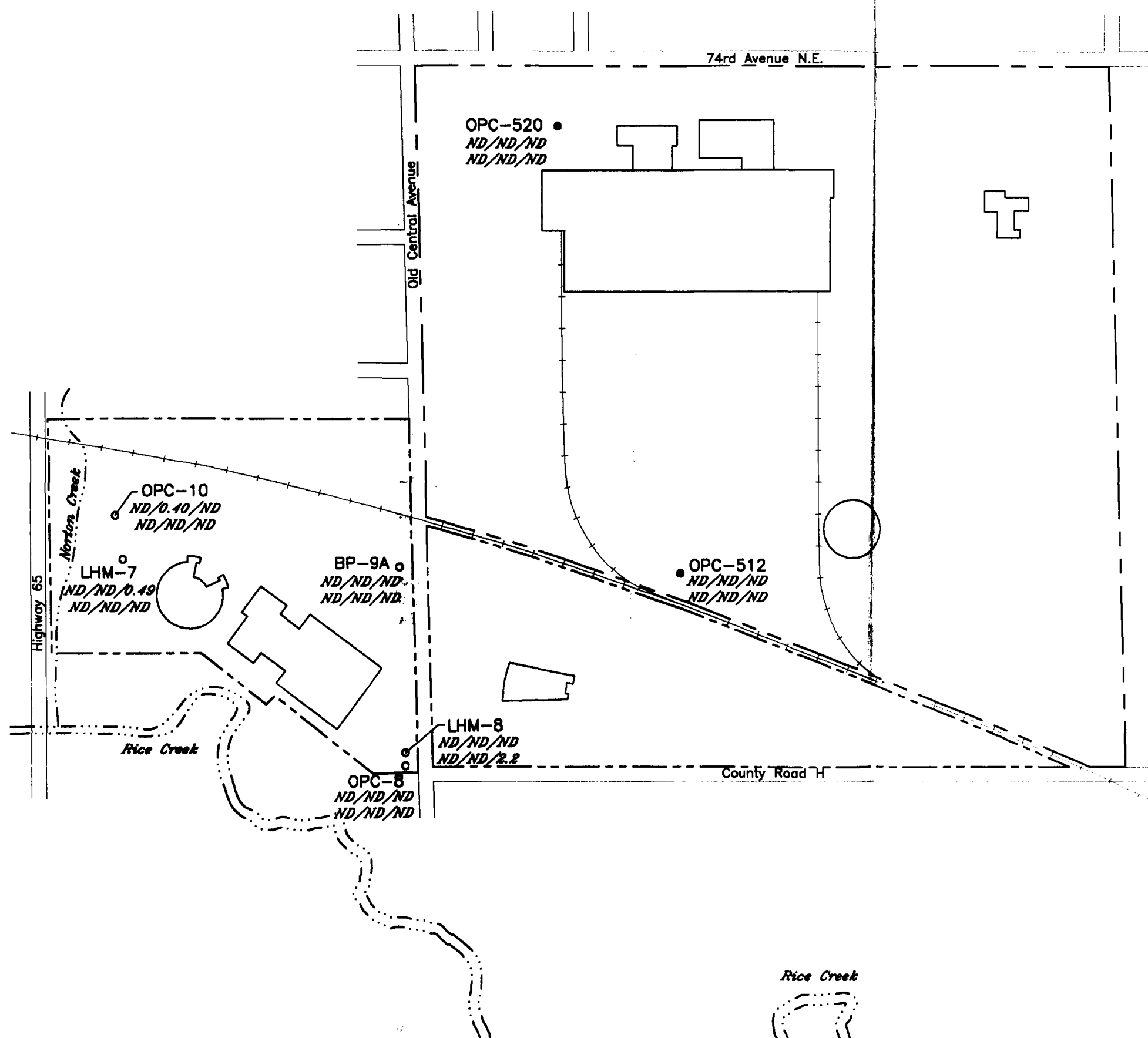


- Wells Monitored in Onan Site Program
  - Wells Monitored in Medtronic Site Program
- FM- Fridley Formation Monitoring Well  
UH- Upper Hillside Sand Monitoring Well

Sum List 1 PAHs	Sum List 2 PAHs	Total Phenolics
	ND/0.016/ND	2002 Data
	ND/ND/ND	2003 Data

Concentrations in ug/L  
ND Not Detected

Figure 4  
GEOGRAPHICAL DISTRIBUTION OF  
ORGANIC COMPOUNDS  
FRIDLEY FORMATION AND  
UPPER HILLSIDE SAND  
2002/2003 Data  
National Pole and Treating Company Site  
Fridley, Minnesota



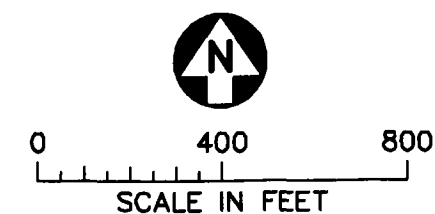
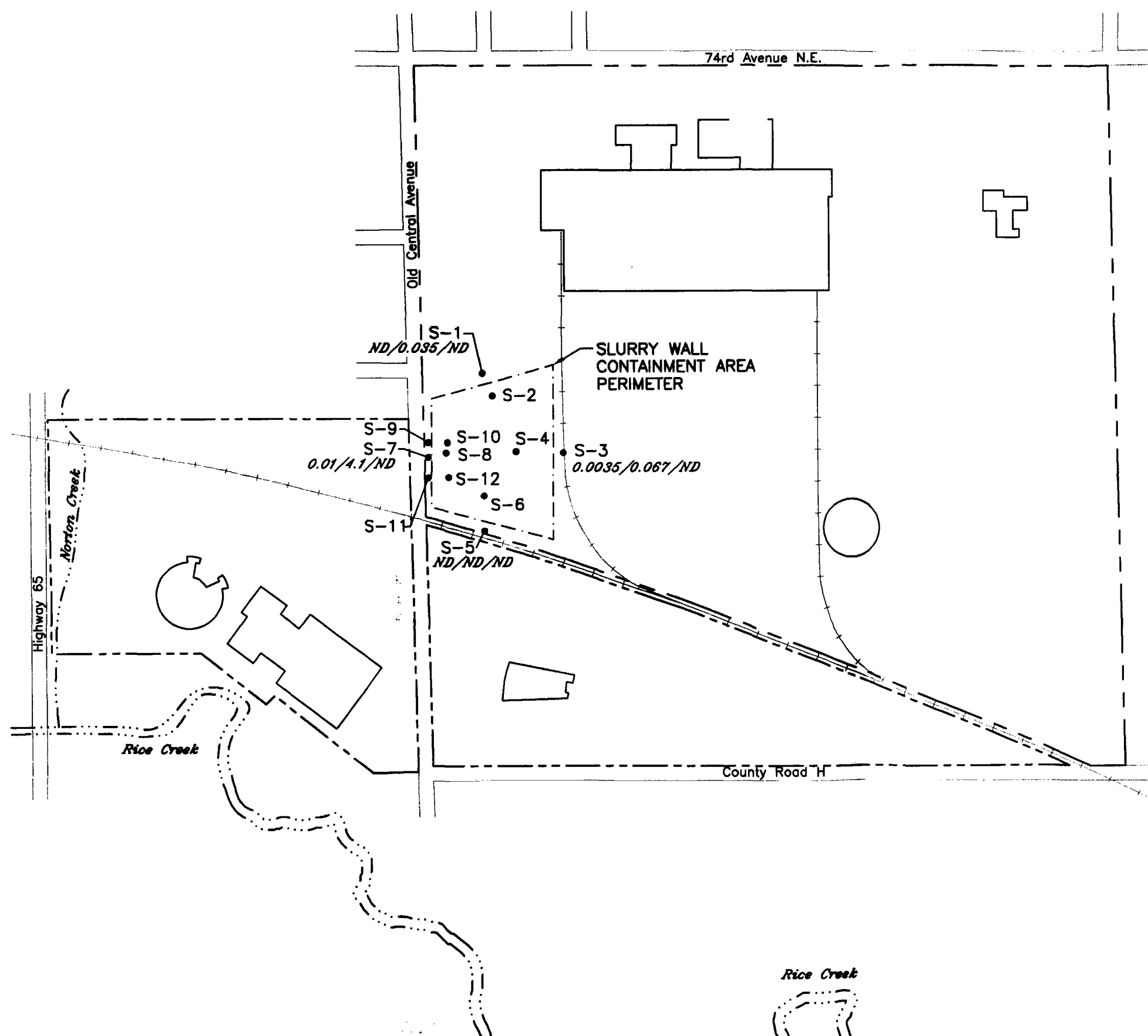
- Wells Monitored in Onan Site Program
  - Wells Monitored in Medtronic Site Program
- LHM- Lower Hillside Monitoring Well  
OPC- Prairie du Chien Monitoring Well

Sum List 1 PAHs	Sum List 2 PAHs	Total Phenolics
	ND/0.40/ND	2002 Data
	ND/ND/ND	2003 Data

Concentrations in ug/L  
ND Not Detected

Figure 5  
GEOGRAPHICAL DISTRIBUTION OF  
ORGANIC COMPOUNDS  
LOWER HILLSIDE AND  
PRAIRIE du CHIEN FORMATIONS  
2002/2003 Data  
National Pole and Treating Company Site  
Fridley, Minnesota





- Wells Monitored in Onan Site Program
- S- Vault Monitoring Wells  
Slurry Wall Containment Area

Sum List 1 PAHs      Sum List 2 PAHs      Total Phenolics

ND/0.067/ND

Concentrations in ug/L

ND Not Detected

Figure 6

GEOGRAPHICAL DISTRIBUTION OF  
ORGANIC COMPOUNDS  
VAULT MONITORING WELLS  
April 2003 Data

National Pole and Treating Company Site  
Fridley, Minnesota

## **APPENDIX B**

**Table 1**  
**Analytical Program Parameters - Revised August 1999**  
**Polynuclear Aromatic Hydrocarbons (PAH), Heterocycles and Phenolic**  
**Compounds**

**PAH and Heterocycles**

**List 1**

benzo(a)anthracene  
dibenz(ah)anthracene  
benzo(b)fluoranthene  
benzo(a)pyrene  
indeno(1,2,3,cd)pyrene  
chrysene  
benzo(ghi)perylene

**List 2**

naphthalene  
2-methylnaphthalene  
acenaphthylene  
acenaphthene  
fluorene  
phenanthrene  
anthracene  
fluoranthene  
pyrene  
benzo(k)fluoranthene  
carbazole  
dibenzofuran

**List 3 - Phenolics**

Phenol  
2,4,6-Trichlorophenol  
Pentachlorophenol

**Table 2**  
**Groundwater Quality Data**  
**Fridley Formation Monitoring Wells**  
(concentrations in ng/L, unless noted otherwise)

Location Date Dup	FM7 5/29/2002	FM7 4/8/2003	FM8A 5/31/2002	FM8A 4/8/2003	FM9 5/29/2002	FM9 4/8/2003	FM10 5/29/2002	FM10 4/8/2003	FM13A 5/29/2002	FM13A 4/7/2003	FM18 5/29/2002	FM18 4/8/2003
<b>List 1 PAH Compounds</b>												
Benzo(a)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Chrysene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(b)fluoranthene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(a)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Sum List 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>List 2 PAH Compounds</b>												
Naphthalene	27	28	<10	<10	<10	<10	10	14	<10	<10	<10	<10
Benzo(k)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	13	15	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	12	<10	<10	<10	<10	110	95	<10	<10	<10	<10
Dibenzofuran	<10	11	<10	<10	<10	<10	150	120	<10	<10	<10	<10
Fluorene	14	20	<10	<10	<10	<10	16	29	<10	<10	<10	<10
Phenanthrene	19	22	16	<10	<10	<10	<10	<10	<10	<10	15	<10
Anthracene	<10	<10	<10	<10	<10	<10	13	20	<10	<10	<10	<10
Carbazole	39	38	<10	<10	<10	<10	270	280	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	13	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sum List 2	110	150	16	ND	ND	ND	570	570	ND	ND	15	ND
<b>Phenolic Compounds, ug/L</b>												
Phenol	1.3	1.7	<0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	<0.50	<0.50	<0.54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Pentachlorophenol	<1.0	<1.0	<1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum List 3	1.3	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

**Table 2**  
**Groundwater Quality Data**  
**Fridley Formation Monitoring Wells**  
(concentrations in ng/L, unless noted otherwise)

Location Date Dup	FM109 6/1/2002	FM109 4/8/2003	FM112 5/31/2002	FM112 4/7/2003	FM113 6/1/2002	FM115A 5/29/2002	FM115A 4/7/2003	FM118 5/29/2002	FM118 5/29/2002	FM118 4/7/2003
<b>List 1 PAH Compounds</b>										
Benzo(a)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Chrysene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(b)fluoranthene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(a)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	<3.4	<3.4	<3.4	<3.4	3.6	<3.4	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	<3.4	<3.4	<3.4	<3.4	3.9	<3.4	<3.4	<3.4	<3.4	<3.4
Sum List 1	ND	ND	ND	ND	7.5	ND	ND	ND	ND	ND
<b>List 2 PAH Compounds</b>										
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbazole	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sum List 2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Phenolic Compounds, ug/L</b>										
Phenol	<0.49	<0.50	<0.49	<0.50	<0.49	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	<0.49	<0.50	<0.49	<0.50	<0.49	<0.50	<0.50	<0.50	<0.50	<0.50
Pentachlorophenol	<0.97	<1.0	<0.97	<1.0	<0.97	<1.0	<1.0	<1.0	<1.0	<1.0
Sum List 3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

**Table 3**  
**Groundwater Quality Data**  
**Lower and Upper Hillside Aquifer Wells**  
**(concentrations in ng/L, unless noted otherwise)**

Location Date Dup	LHM7 5/31/2002	LHM7 4/10/2003	LHM8 5/31/2002	LHM8 5/31/2002 DUP	LHM8 4/10/2003	BP9B 6/1/2002	BP9B 4/9/2003	UH301A 5/31/2002	UH301A 4/10/2003
<b>List 1 PAH Compounds</b>									
Benzo(a)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Chrysene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(b)fluoranthene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(a)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Sum List 1	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>List 2 PAH Compounds</b>									
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzofuran	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbazole	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sum List 2	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>Phenolic Compounds, ug/L</b>									
Phenol	0.49	<0.50	<0.48	<0.49	2.2	<0.50	<0.50	<0.49	<0.50
2,4,6-Trichlorophenol	<0.49	<0.50	<0.48	<0.49	<0.50	<0.50	<0.50	<0.49	<0.50
Pentachlorophenol	<0.97	<1.0	<0.96	<0.97	<1.0	<1.0	<1.0	<0.98	<1.0
Sum List 3	0.49	ND	ND	ND	2.2	ND	ND	ND	ND

ND Not detected.

**Table 4**  
**Groundwater Quality Data**  
**Prairie Du Chien Aquifer Wells**  
(concentrations in ng/L, unless noted otherwise)

Location Date Dup	OPC8 5/31/2002	OPC8 4/10/2003	OPC8 4/10/2003 DUP	BP9A 6/1/2002	BP9A 4/9/2003	OPC10 5/31/2002	OPC512 5/31/2002	OPC512 4/10/2003	OPC520 5/31/2002	OPC520 4/10/2003
<b>List 1 PAH Compounds</b>										
Benzo(a)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Chrysene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(b)fluoranthene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(a)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Sum List 1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>List 2 PAH Compounds</b>										
Naphthalene	<10	<10	<10	<10	<10	300	<10	<10	<10	<10
Benzo(k)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10	<10	27	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	33	<10	<10	<10	<10
Dibenzofuran	<10	<10	<10	<10	<10	12	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbazole	<10	<10	<10	<10	<10	20	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sum List 2	ND	ND	ND	ND	ND	400	ND	ND	ND	ND
<b>Phenolic Compounds, ug/L</b>										
Phenol	<0.49	<0.50	<0.50	<0.50	<0.50	<0.54	<0.49	<0.50	<0.49	<0.50
2,4,6-Trichlorophenol	<0.49	<0.50	<0.50	<0.50	<0.50	<0.54	<0.49	<0.50	<0.49	<0.50
Pentachlorophenol	<0.97	<1.0	<1.0	<1.0	<1.0	<1.1	<0.97	<1.0	<0.97	<1.0
Sum List 3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

**Table 5**  
**Water Level Data**  
**Containment Area**  
**(elevations in ft.-MSL)**

Location	Date	Water Elevation
S1	05/29/2002	876.67
S1	04/07/2003	876.24
S2	05/29/2002	DRY
S2	04/07/2003	DRY
S3	05/29/2002	880.94
S3	04/07/2003	880.59
S4	05/29/2002	DRY
S4	04/07/2003	DRY
S5	05/29/2002	875.90
S5	04/07/2003	874.09
S6	05/29/2002	DRY
S6	04/07/2003	DRY
S7	05/29/2002	872.35
S7	04/07/2003	871.68
S8	05/29/2002	DRY
S8	04/07/2003	DRY
S9	05/29/2002	872.42
S9	04/07/2003	871.63
S10	05/29/2002	DRY
S10	04/07/2003	DRY
S11	05/29/2002	871.89
S11	04/07/2003	872.07
S12	05/29/2002	865.12
S12	04/07/2003	865.15



**Table 6**  
**Groundwater Quality Data**  
**Containment Area**  
(concentrations in ng/L, unless noted otherwise)

Location Date	S1 4/9/2003	S3 4/9/2003	S5 4/9/2003	S7 4/9/2003
<b>List 1 PAH Compounds</b>				
Benzo(a)anthracene	<3.4	<3.4	<3.4	4.3
Chrysene	<3.4	<3.4	<3.4	6.1
Benzo(b)fluoranthene	<3.4	3.5	<3.4	<3.4
Benzo(a)pyrene	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	<3.4	<3.4	<3.4	<3.4
Sum List 1	ND	3.5	ND	10
<b>List 2 PAH Compounds</b>				
Naphthalene	20	<10	<10	31
Benzo(k)fluoranthene	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	12
Acenaphthene	<10	<10	<10	58
Dibenzofuran	<10	<10	<10	550
Fluorene	<10	<10	<10	66
Phenanthrene	<10	13	<10	670
Anthracene	15	13	<10	220
Carbazole	<10	13	<10	2100
Fluoranthene	<10	17	<10	270
Pyrene	<10	11	<10	140
Sum List 2	35	67	ND	4100
<b>Phenolic Compounds, ug/L</b>				
Phenol	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	<0.50	<0.50	<0.50	<0.50
Pentachlorophenol	<1.0	<1.0	<1.0	<1.0
Sum List 3	ND	ND	ND	ND

ND Not detected.

**Table 7**  
**Groundwater Quality Data**  
**Compared to Class 2BD Surface Water Standards**  
**(concentrations in ng/L, unless noted otherwise)**

	Minnesota Surface Water Quality Class 2Bd Criteria									
Location Date Dup	Chronic 1/31/2000	Maximum 1/31/2000	FM7 5/29/2002	FM7 4/8/2003	FM8A 5/31/2002	FM8A 4/8/2003	FM10 5/29/2002	FM10 4/8/2003	FM112 5/31/2002	FM112 4/7/2003
Exceedance Key	Bold	Underline								
<u>List 1 PAH Compounds</u>										
Benzo(a)anthracene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Chrysene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(b)fluoranthene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(a)pyrene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Indeno(1,2,3-cd)pyrene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Dibenz(a,h)anthracene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Benzo(g,h,i)perylene	--	--	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Sum List 1	--	--	ND	ND	ND	ND	ND	ND	ND	ND
<u>List 2 PAH Compounds</u>										
Naphthalene	81000	409000	27	28	<10	<10	10	14	<10	<10
Benzo(k)fluoranthene	--	--	<10	<10	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	--	--	13	15	<10	<10	<10	<10	<10	<10
Acenaphthylene	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	20000	56000	<10	12	<10	<10	110	95	<10	<10
Dibenzofuran	--	--	<10	11	<10	<10	150	120	<10	<10
Fluorene	--	--	14	20	<10	<10	16	29	<10	<10
Phenanthrene	3600	32000	19	22	16	<10	<10	<10	<10	<10
Anthracene	35	320	<10	<10	<10	<10	13	20	<10	<10
Carbazole	--	--	39	38	<10	<10	270	280	<10	<10
Fluoranthene	1900	3500	<10	<10	<10	<10	<10	13	<10	<10
Pyrene	--	--	<10	<10	<10	<10	<10	<10	<10	<10
Sum List 2	--	--	110	150	16	ND	570	570	ND	ND
<u>Phenolic Compounds, ug/L</u>										
Phenol	123	2214	1.3	1.7	<0.54	<0.50	<0.50	<0.50	<0.49	<0.50
2,4,6-Trichlorophenol	2.0	102	<0.50	<0.50	<0.54	<0.50	<0.50	<0.50	<0.49	<0.50
Pentachlorophenol	1.9	15 PD	<1.0	<1.0	<1.1	<1.0	<1.0	<1.0	<0.97	<1.0
Sum List 3	--	--	1.3	1.7	ND	ND	ND	ND	ND	ND

-- Not analyzed/No criteria.

PD pH dependent. The specific analyte should be referenced in Minnesota Rules Chapter 7050.0222 for specific exp. calculations.

The value reported is assuming a pH of 7.5.

## APPENDIX C

## **BIBLIOGRAPHY**

September 23, 1993 Site Review and Update, Boise Cascade/Onan/Medtronic, U.S. Department of Health and Human Services

January 2000, 1998 and 1999 Environmental Monitoring Report, National Pole and Treating Company Site, Fridley, MN, Barr Engineering Company

May 2000 Quality Assurance Project Plan, National Pole and Treating Company

March 2002, 2000 and 2001 Environmental Monitoring Report, National Pole and Treating Company Site, Fridley, MN, Barr Engineering Company

February 2004, 2002 and 2003 Environmental Monitoring Report, National Pole and Treating Company Site, Fridley, MN, Barr Engineering Company